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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,477	03/11/2004	Kee-Yean Ng	70030733-1	7408
22878	7590	12/07/2005	EXAMINER	
AGILENT TECHNOLOGIES, INC. INTELLECTUAL PROPERTY ADMINISTRATION, LEGAL DEPT. P.O. BOX 7599 M/S DL429 LOVELAND, CO 80537-0599			QUARTERMAN, KEVIN J	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 12/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

5) /

Office Action Summary	Application No. 10/798,477	Applicant(s) NG ET AL.	
	Examiner Kevin Quarterman	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2005.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-20 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment and remarks received 26 October 2005 have been entered and overcome the objection to the drawings.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Reeh (US 6,576,930).
4. Regarding independent claim 1, Figure 3 of Reeh shows a light-emitting diode display device comprising a substrate (2); a plurality of walls (8) disposed on the substrate, the plurality of walls forming a cavity (9), the cavity being filled with an encapsulant (15), the encapsulant not including fluorescent material; an LED (1) disposed on a first portion (2) of the substrate within the cavity; an electrical connection (14) between the LED and a second portion (3) of the substrate; and a fluorescent material overlay (4) at a top end of the cavity. The Examiner notes that apparatus claims must be distinguished from the prior art in terms of structure rather than function (MPEP § 2114), and that expressions relating the apparatus to contents thereof during

an intended operation are of no significance in determining patentability of the apparatus claim (MPEP § 2115). Thus, the recitation that the fluorescent material overlay "...converts all light emitted from the LED to fluorescent radiation" has not been given patentable weight.

5. Regarding claim 2, Figure 3 of Reeh shows the fluorescent material overlay including a layer of phosphor particles (6).

6. Regarding claim 3, Figure 3 of Reeh shows the fluorescent material overlay having a substantially consistent thickness and includes a substantially uniform matrix of phosphor particles.

7. Regarding claim 4, Reeh discloses the fluorescent material overlay including a combination of two or more fluorescent material types (col. 4, ln. 53-57).

8. Regarding claim 5, Reeh discloses the fluorescent material overlay including phosphor particles having a mean diameter within the range of 1 micrometer to 50 micrometer (col. 6, ln. 1-2).

9. Regarding claim 6, Reeh discloses the fluorescent material overlay including phosphor particles having a mean diameter within the range of 10nm to 100nm (col. 9, ln. 1-5).

10. Regarding claim 7, Reeh discloses the fluorescent material overlay may include an organic dye (col. 9, ln. 24-28).

11. Regarding independent claim 8, Figure 3 of Reeh shows a light-emitting diode display device comprising a substrate (2); a plurality of walls (8) disposed on the substrate, the plurality of walls forming a cavity (9); an LED (1) disposed on a first

Art Unit: 2879

portion (2) of the substrate within the cavity; an electrical connection (14) between the LED and a second portion (3) of the substrate; and a fluorescent material overlay (4, 29) at a top end of the cavity, the fluorescent material overlay having an area including a layer of fluorescent material (4, 6) disposed over only a portion of the area, wherein another portion of the area (29) does not have any fluorescent material (see also col. 12, ln. 51-67).

12. Regarding claim 9, Figure 3 of Reeh shows the fluorescent material overlay having a substantially consistent thickness and includes a substantially uniform matrix of phosphor particles.

13. Regarding claim 10, Reeh discloses the fluorescent material overlay including a combination of two or more fluorescent material types (col. 4, ln. 53-57).

14. Regarding claim 11, Reeh discloses the fluorescent material overlay including phosphor particles having a mean diameter within the range of 1 micrometer to 50 micrometer (col. 6, ln. 1-2).

15. Regarding claim 12, Reeh discloses the fluorescent material overlay including phosphor particles having a mean diameter within the range of 10nm to 100nm (col. 9, ln. 1-5).

16. Regarding claim 13, Reeh discloses the fluorescent material overlay may include an organic dye (col. 9, ln. 24-28).

17. Regarding independent claim 14, Figure 3 of Reeh shows a light-emitting diode display device comprising a substrate (2); a plurality of cavities (9), each of the plurality of cavities formed within a plurality of walls (8) disposed on the substrate; a plurality of

Art Unit: 2879

LEDs (1), each of the plurality of LEDs disposed within a separate one of the plurality of cavities, each of the plurality of LEDs disposed on a first portion (2) of the substrate; a plurality of electrical connections (14) connecting one of the plurality of LEDs to one or more respective second portions (3) of the substrate; and a fluorescent material overlay (4) at a top end of the cavities (See also col. 9, ln. 45-58).

18. Regarding claim 15, Figure 3 of Reeh shows the fluorescent material overlay including a layer of phosphor particles (6).

19. Regarding claim 16, Figure 3 of Reeh shows the fluorescent material overlay having a substantially consistent thickness and includes a substantially uniform matrix of phosphor particles.

20. Regarding claim 17, Reeh discloses the fluorescent material overlay including phosphor particles having a mean diameter within the range of 1 micrometer to 50 micrometer (col. 6, ln. 1-2).

21. Regarding claim 18, Reeh discloses the fluorescent material overlay including phosphor particles having a mean diameter within the range of 10nm to 100nm (col. 9, ln. 1-5).

22. Regarding claim 19, Reeh discloses the fluorescent material overlay may include an organic dye (col. 9, ln. 24-28).

23. Regarding claim 20, Reeh discloses the fluorescent material overlay also including a plurality of fluorescent material types, and each of the plurality of fluorescent material types corresponds to a portion or portions of the plurality of cavities (col. 4, ln. 53-62).

Response to Arguments

24. Applicant's arguments received 26 October 2005 have been fully considered but they are not persuasive.

25. In response to applicant's argument that Reeh does not teach the fluorescent material layer fully converting all light emitted from the LED to fluorescent radiation, the Examiner notes that apparatus claims must be distinguished from the prior art in terms of structure rather than function (MPEP § 2114), and that expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim (MPEP § 2115). The Examiner also notes that Reeh discloses YAG:Ce as a possible material for the fluorescent material (col. 12, ln. 3-5). Applicant discloses that the fluorescent material of the instant application may also be YAG:Ce. Thus, the Examiner holds that Reeh does indeed teach each of the limitations of independent claim 1, as discussed earlier.

26. In response to applicant's argument that Reeh does not teach that only a portion of the overlay can contain the fluorescent material, the Examiner notes that Figure 3 of Reeh shows the overlay (glass covering 29 in combination with conversion layer 4) with only a portion (4) containing the fluorescent material. Thus, the Examiner holds that Reeh does indeed teach each of the limitations of independent claim 8, as discussed earlier.

27. In response to applicant's argument that Reeh does not teach a plurality of cavities, each having an LED with overlay, the Examiner notes that Reeh discloses that the LED structure of Figure 3 may be used in several applications, including display

elements in motor vehicle dashboards, laser diodes, and full-color LED displays (col. 1, ln. 24-65). Since these applications would require a plurality of the LED structure shown in Figure 3, the Examiner holds that Reeh does indeed teach a plurality of cavities, each with an LED structure as claimed in the instant application (See also US 6,734,465).

28. In response to applicant's argument that Reeh does not teach the fluorescent material overlay including a plurality of fluorescent material types, the Examiner notes that Reeh discloses that the conversion element may have one or more luminescent material added (col. 6, ln. 57-66). Thus, the Examiner holds that Reeh does indeed teach the fluorescent material overlay including a plurality of fluorescent material types, as discussed earlier.

Conclusion

29. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

30. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

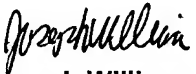
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (571) 272-2461. The examiner can normally be reached on M-TH (7-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin Quarterman
Examiner
Art Unit 2879

kq 
4 December 2005


Joseph Williams
Primary Examiner
Art Unit 2879